

REMARKS

In response to the Office Action of November 18, 2003, Applicants respectfully request reconsideration. Claims 1-5 and 7-18 were previously pending in this application. By this amendment, Applicants have cancelled claims 2 and 7 and added new claims 19 and 20. Thus, claims 1, 3-5, and 8-20 are now pending, and the application as presented is believed to be in condition for allowance.

The Office Action rejected claims 1-5 and 7-18 under 35 U.S.C. §103(a) as purportedly obvious over Byrn (5,533,020). Applicants respectfully traverse this rejection. First, one of skill in the art would not have been motivated to modify Byrn in the manner suggested in the Office Action. Second, even if one were to modify the system of Byrn in this manner, Applicants' claims still distinguish over the modified system.

A. The Asserted Modification Of Byrn Is Improper

The Office Action admits that Byrn does not disclose or suggest a data stream selector that operates at substantially constant time intervals (*see* Office Action, page 5, first full paragraph). However, the Office Action asserts that one of skill in the art would have been motivated to modify Byrn to not assign priority levels to timing wheels and to use only a single wheel rate for the timing wheels to avoid experiencing undesirable jitter (*see* Office Action page 6, lines 3-12). The Office Action further asserts that modifying the system of Byrn in this manner would result in a system in which timing wheels operate at substantially constant time intervals. Applicants respectfully disagree with these assertions.

One of skill in the art would not have been motivated to modify the system Byrn in the manner suggested in the Office Action. Indeed, Byrn teaches away from such a modification. At column 3, lines 3-10, Byrn discusses the advantages of using timing wheels having different rates. Specifically, Byrn discloses that such wheels allow simple insertion of cells into queues based on priority, rate, and target transmission time (TTT), enable the scheduling of cells with a wide range of transmission rates, and reduce the number of queue entries that must be visited in each scheduling cycle. Modifying Byrn in the manner suggested in the Office Action would result in the a system that does not provide these advantages.

Further, the modified system of Byrn including a timing wheel without priority levels and having a single wheel rate would not operate with multiple virtual connections having different transmission rates, because wheel rates correspond to the transmission rates of virtual connections. Thus, the modified Byrn system could operate only with a single transmission rate corresponding to the wheel rate of the timing wheel.

Thus, one of skill in the art would not have been motivated to modify the system of Byrn in the manner asserted by the Examiner, because such a modification would result in a downgrade in the performance of the system. Accordingly, it is respectfully requested that the rejection of claims 1-5 and 7-18 be withdrawn.

B. Applicants Claims Patentably Distinguish Over The Modified System

Even if one were to modify the system of Byrn in the manner asserted by the Examiner (the modified Byrn system), Applicant's claims distinguish over the modified Byrn system.

Claim 1 is directed to a data transmission apparatus for transmitting data from a plurality of data streams over a data channel. The apparatus comprises: a data stream control memory for storing a scheduling variable for each data stream, each scheduling variable being indicative of a scheduled transmission timing for that data stream; a clock for maintaining a current timing indication; a data stream selector for, at substantially constant time intervals, comparing the scheduling variables stored in the memory and selecting the scheduling variable indicative of the earliest scheduled transmission timing and, if that scheduled transmission timing is not earlier than the current timing, generating an indication of the data stream corresponding to the selected scheduling variable and incrementing the selected scheduling variable; and a data transmission unit for receiving the indication of the data stream and transmitting an amount of data from that data stream over the data channel.

The modified Byrn system does not include a "scheduling variable being indicative of a scheduled transmission timing for that data stream," as recited in claim 1. The Office Action asserts that Byrn discloses a scheduling variable as claimed in the form of priority p and wheel rate r . However, the modified Byrn system does not assign priorities (p) and a single timing wheel rate (r) is used. Thus, the priority p does not exist in the modified Byrn system, and wheel rate r is the same (i.e., not a variable) for all wheels. As wheel rate r is the same for all wheels,

wheel rate r is not “indicative of a scheduled transmission timing for that data stream”, as required by the claim. If wheel rate r were indicative of a scheduled transmission timing, then all cells would be scheduled for transmission at the same time, as there is only a single possible value of wheel rate r in the modified Byrn system. However, wheel rate r does not indicate when a particular cell is scheduled for transmission, as the Office Action asserts, but merely indicates the rate at which a timing wheel rotates.

As Byrn fails to disclose or suggest the scheduling variables recited in claim 1, claim 1 patentably distinguishes over Byrn. Accordingly, it is respectfully requested that the rejection of claim 1 under 35 U.S.C. §103(a) be withdrawn.

Claims 3-5 and 8-18 depend from claim 1 and are patentable for at least the same reasons. Accordingly, it is respectfully requested that the rejection of claims 2-5 and 7-18 be withdrawn.

Newly Added Claims

Claims 19 and 20 are newly added in this application. Claims 2 and 7 have been rewritten in independent form as new claims 19 and 20, respectively. These claims are allowable over the cited references for at least the reasons discussed above.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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